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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,796	12/09/1999	DONALD F. GORDON	19880-000720	9295

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EXAMINER
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ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

	Application No.	Applicant(s)
Office Action Summary	09/458,796	GORDON ET AL.
	Examiner	**Art Unit**
	Son P Huynh	2611

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2000</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) <u>20</u> are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>09 December 1999</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> .   6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

1.   Restriction to one of the following inventions is required under 35 U.S.C. 121:

I.   Claims 1-19, drawn to an apparatus and method for encoding realtime and non-realtime contents, classified in class 725, subclass 91.

II.   Claim 20, drawn to a terminal for receiving and demodulating a modulated signals, classified in class 725, subclass 100.

2.   Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the terminal for receiving and decoding a modulated signals feature of group II can be used in other system such as set top box.

3.   Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

4.   Because these inventions are distinct for the reasons given above and

have acquired a separate status in the art because of their recognized divergent subject

matter, restriction for examination purposes as indicated is proper.

5.   During a telephone conversation with attorney Steve Hertzberg (Reg.

41834) on 1/16/2003 a provisional election was made with traverse to prosecute the

invention of group I, claims 1-19. Affirmation of this election must be made by applicant

in replying to this Office action. Claim 20 is withdrawn from further consideration by the

examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Specification

6.   The disclosure is objected to because of the following informalities: US

patent application, line 7 of page 8, is missing. Appropriate correction is required.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for

all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-9,11-12, 14-16 and 19 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Naimpally (US 5,619,337), and in view of Yanagihara (US

5,859,949).

Regarding claim 1, Naimpally discloses encoder 112 comprises video encoder

140, audio encoder 142, data encoder 144 for encoding video, audio and data in PES

packets, the PES packets are supplied to a transport encoder/multiplexer 146, the

multiplexer 146 formats each of the PES packets into one or more transport packets,

these packets are transmitted to FIFO buffer 150, the transport packets then sent to

multiplexer 116, the multiplexer 116 reformats and interleaves the transport packets for

the individual single program transport streams into a multi-program transport streams

(see figures 1A, 1B and, col. 3, lines 50-61; col. 5, lines 30-49). Inherently, the

apparatus comprises non-realtime content source (data content source) configured to

provide non-realtime content; a non-realtime encoder (encoder 144) coupled to the non-

realtime content source and configured to encode the non-realtime content into

encoded non-realtime content; a realtime content source configured to provide realtime

content; a realtime encoder (encoders 140, 142) coupled to the realtime content;

multiplexer 116 reads on the remultiplexer. In addition, Naimpally discloses providing

timing signal containing timing information for each of respective one of the transport

packets in the stream and means for encoding the time information (see col. 10, lines

60-65). However, Naimpally does not specifically disclose a re-timestamp unit coupled

to the remultiplexer and configured to provide timestamps to be applied to the transport

packets in order to synchronize the realtime and non-realtime contents.

Yanagihara teaches a re-timestamp unit 12 coupled to the remultiplexer 10,

Multiplexer 10 supplies the multiplexed signal at a bit rate of 30 Mbps to the PCR

restamping circuit 12. PLL circuit 5 supplies the output of circuit 8, identified herein as

data PCR', also, to PCR restamping circuit 12 which replaces in the multiplexed signal

the PCR data with the PCR' data (see figure 5 and col. 7, lines 58-67). Inherently, re-

timestamps unit is configured to provide timestamps to be applied to the transport

packets in order to synchronize the realtime and non-realtime contents. Therefore, it

would have been obvious to one of ordinary skill in the art at the time the invention was

made to modify Naimpally to incorporate the feature as taught by Yanagihara in order to

synchronize the realtime and non-realtime contents.

Regarding claim 2, Naimpally in view of Yanagihara teaches an apparatus as

discussed in the rejection of claim 1. Inherently, the apparatus is located within a head

end of a cable distribution system in order to provide transport packets to multiple

receivers, thereby increase efficiency for the system.

Regarding claim 3, Yanagihara teaches 27 MHz system clock (see figures 2 and

5) that read on the clock unit.

Regarding claim 4, Naimpally discloses the fullness of buffer 150 is monitored by

buffer control circuitry 148. If the number of transport packets in the buffer 150 exceeds

a high water mark, the buffer control circuitry 148 sends a signals to encoders 140, 142,

144 to decrease either the rate at which PES packets are provided or size of each PES

packet. If the number of transport packets in the buffer 150 falls below a low water

mark, the controller 148 sends a signal to the encoders 140, 142, 144 which causes the

controller to increase the rate at which PES packets are provide or to increase the size

of a PEC packet (see col. 5, lines 49-62). It is obvious that the rate control unit

(controller 148) configured to determine an encoding rate for the non-realtime content

and to provide the determined encoding rate for the non-realtime content to the non-

realtime encoder in order to avoid underflow and overflow.

Regarding claim 5, the rate at which PES packets are provided is determined

based on the fullness of buffer 150 as discussed in the rejection of claim 4. It is obvious

that the encoding rate for the non-realtime content is determined based at least in part

on an output rate of the transport stream in order to prevent underflow and overflow

Regarding claim 6, the controller 148 determines the rate which PES packets are

provided based on the fullness of buffer 150 as discussed in the rejection of claim 4. It is

obvious that the rate control unit determines an encoding rate for the realtime content

based on at least in part on an output rate of the transport in order to avoid underflow

and overflow.

Regarding claim 7, Naimpally teaches the realtime content includes video and audio contents (see figure 1B).

Regarding claim 8, Naimpally teaches the data includes PAT, PMT and CAT (see col. 6, lines 35+). Therefore, Naimpally teaches the non-realtime content includes guide data.

Regarding claim 9, Naimpally teaches the realtime encoder includes a video encoder configured to encode the realtime video content; and an audio encoder configured to encode the realtime audio content (see figures 1A, 1B).

Regarding claim 11, Yanagihara teaches the timestamps provided by the re-timestamp unit replace timestamps generated by the realtime and non-realtime encoders (see figure 5).

Regarding claim 12, Naimpally teaches transport encoder/multiplexer 146 reads on the slice combiner (see figures 1A, 1B).

Regarding claim 14, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 1 and are analyzed as discussed in the rejection of claim 1.

Regarding claim 15, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 3 and are analyzed as discussed in the rejection of claim 3.

Regarding claim 16, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 5 and are analyzed as discussed in the rejection of claim 5.

Regarding claim 19, the limitations of the method correspond to the limitations of the apparatus as being claimed in claim 12 and are analyzed as discussed in the rejection of claim 12.

9.   Claims 10, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naimpally (US 5,619,337) in view of Yanagihara (US 5,859,949) and further in view of Adams (US 6,044,396).

Regarding claim 10, Naimpally in view of Yanagihara teaches an apparatus as discussed in the rejection of claim 5. However, neither Naimpally nor Yanagihara specifically discloses the encoding rate for the non-realtime content is determined based on a maximum bit rate anticipated for the encoded realtime content.

Adams discloses the selector 404 selects data from the video buffers 400 until all video buffers 400 are empty; the selector 404 passes data form the application buffer 402 to the output buffer 406. The selector 404 continues reading from the application buffer 402 until data is detected in one or more of the video buffers 400 (see col. 4, line 65-col. 5, line 7; col. 7, lines 6-27). Inherently, the encoding rate for the non-realtime content is determined based on a maximum bit rate anticipated for the encoded realtime content. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Naimpally and Yanagihara to incorporate the feature as taught by Adams in order to provide realtime content to receiver on time thereby increase data transmission efficiency.

Regarding claim 17, the limitations of the method being claimed correspond to the limitations of the system being claimed in claim 10 and are analyzed as discussed in the rejection of claim 10.

Regarding claim 18, Naimpally in view of Yanagihara teaches an apparatus as discussed in the rejection of claim 14. However, neither Naimpally nor Yanagihara specifically discloses the allocating the bit rate for the encoded non-realtime content among a plurality of pages of non-realtime content.

Adams teaches allocating the bit rate for the encoded non-realtime content (see figure 10 and col. 7, lines 6-49). Therefore, it would have been obvious to one of

ordinary skill in the art at the time the invention was made to modify Naimpally and

Yanagihara to incorporate the feature as taught by Adams in order to prevent underflow

and overflow.

10.   Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Naimpally (US 5,619,337), in view of Yanagihara (US 5,859,949) and further in view of

Alexander (US 6,177,931).

Regarding claim 13, Naimpally in view of Yanagihara teaches an apparatus as

discussed in the rejection of claim 1. However, neither Naimpally nor Yanagihara

specifically discloses realtime and non-realtime contents intended to be displayed in a

single frame are re-timestamped by the re-timestamp unit such that the contents are

decoded and presented in the same frame.

Alexander teaches an IPG comprises PIP window for displaying video,

Advertisement window 1 and advertisement window 2 for displaying advertisements and

grid portion for displaying program information (see figure 1). Inherently, realtime and

non-realtime contents intended to be displayed in a single frame are re-timestamped by

the re-timestamp unit such that the contents are decoded and presented in the same

frame. Therefore, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to modify Naimpally and Yanagihara to incorporate the

feature as taught by Alexander in order to allow viewer to view advertisements, video

and program information at the same time in the same screen.

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Kawamura et al. (US 2001/0005447) teaches data multiplexer, data multiplexing

method, data recording medium, data recorder, data demultiplexer and data

demultiplexing method.

Haskell et al. (US 5,543,853) teaches encoder/decoder buffer control for variable bit

rate channel.

Takahashi (US 6,359,910) teaches clock conversion apparatus and method.

Lyons et al. (US 6,061,399) teaches method and apparatus for information stream

frame synchronization.

Lenihan et al. (US 6,169,843) teaches recording and playback of audio-video transport

stream.

Nuber et al. (US 5,598,415) teaches transmission of high rate isochronous data in MPEG 2 data streams

Terasawa et al. (US 6,147,714) teaches control apparatus and control method for displaying electronic program guide.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P Huynh whose telephone number is 703-305-1889. The examiner can normally be reached on 8:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Faile can be reached on 703-305-4380. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-306-0377.

Son P. Huynh
January 27, 2003

CHRIS GRANT
PRIMARY EXAMINER